



**THE INFLUENCE OF THE QUIZ TEAM LEARNING  
MODEL ASSISTED BY IT MEDIA AND LEARNING  
MOTIVATION ON SCIENCE LEARNING  
OUTCOMES AND SOCIAL SKILLS IN STUDENTS  
CLASS VI ELEMENTARY SCHOOL NO. 067097  
MEDAN**

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**Abstract**

*This study aims to see the influence of Team Quiz and motivation on improving student learning outcomes and their effect on social skills. The type of this research is a quasi-experimental type with a 2-factor factorial design. The sample of this study was 50 people, consisting of 25 students in class VI-A, and 25 students in class VI-B. This study uses a questionnaire that previous experts have validated. The control and experimental classes were differentiated based on the motivational questionnaire pretest, and then the social skills questionnaire pretest was conducted. The success of the Team Quiz model can be concluded based on the posttest results, namely the success of students in learning outcomes by 28% and increasing students' social skills by 32%.*

**Keywords:** *Influence, Quiz Team, Motivation, Learning Outcomes, Social Skills*

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**A. Introduction**

Education is a means to achieve success for everyone. A country can be said to be advanced if it pays attention to the nation's education. Thus students must be equipped with knowledge both in the social and natural fields to face the problems they will face when they grow up. Wrong One subject that is quite difficult in elementary school is science. Science is a lesson related to nature. In learning science, students are asked to use all their senses to understand nature. Various efforts have been made to improve student learning outcomes. These efforts include using various approaches to activate students both physically and mentally to learn science, one of which is by linking learning materials with their application in everyday life, or in other words, students are brought in a real atmosphere in the learning process so that they can practice their scientific skills.

In elementary schools, recently, in learning science, problems arise about how to activate students. In the classroom, students' active learning methods have not been seen in educational activities at school. To improve the quality of education, active learning also needs to be improved. Silberman (2013: 9) says learning requires mental involvement and the work of the students themselves. Proves that explanation and demonstration alone will not produce good learning outcomes. Then how about active learning? In order to learn to be active, students must do many assignments, think critically, be able to solve problems, be agile, excited, and passionate.

In fact, at this time in science learning, there are still many teachers who convey messages or contents of science learning in words alone, while students only listen to the teacher's explanation and take notes that are considered essential. There are still many found in the

classroom during learning activities, students often converse with their friends, disturb their friends who are studying, are not interested in the subject matter, lack of interest and motivation in students makes students not active in learning so that learning outcomes are not satisfactory.

One way to make students active in learning is to use the Team Quiz type of cooperative learning model. Team Quiz is a learning model where students are invited to work together and work for hand in hand with their friends to win quizzes, where the questions to be discussed are questions that come from the material being studied. Jhonson & Johnson (1994) in Trianto (2014:109) said that the primary goal of cooperative learning is to maximize student learning to increase academic achievement and understanding both individually and in groups because student teamwork can automatically improve relationships. Students from various ethnic backgrounds and abilities develop group process skills and problem-solving (Louisell & Descamps) in Trianto (2014: 109).

Based on the results of observations at SD Negeri 067097, Medan Barat District, Medan City, it was found that the science learning outcomes obtained by students were still low. This information is obtained from the students' daily test scores obtained from the homeroom teacher. Low scores were found mainly in theme I, the sub-theme of My Friends Plants in class VI. There are still many student scores that are far below the KKM score, which is 70. Students who have not achieved this KKM score are 60% with details, class VIa as many as 15 students and class VIb as many as 16 students. The observations prove that students' scores are very low in this chapter because of the amount of material presented in this theme-I, starting from the reproduction of plants and animals, their types, characteristics, and the process of occurrence generatively or vegetatively, along with examples. With much

material, it was found that teachers only used conventional methods as their learning methods. Teachers in the classroom also only use books as a learning resource, then students take notes and then memorize essential things. Another fact that can be obtained is that 50% of students show a lack of care and confidence. Causes a gap between bright students and poor students. This gap can be seen from forming groups of students whose contents consist of only bright students, while less capable students also form their groups. So seeing this situation, it is necessary to conduct a study.

Various problems found in SD Negeri 067097 Medan become a reference for researching to answer all the problems. This study aims to improve student learning outcomes and social skills based on the Team Quiz type model and student learning motivation

## **B. Method**

This research was conducted at Public Elementary School Number 067097, located at Jalan Karya II, Karang Berombak Village, West Medan District, Medan City, postcode 20117. Researchers chose the location of this research because: (1) There are problems in this school related to this research. (2) In this school, there is no similar research. This research was conducted for 3 months in 2020/2021, starting from March to May 2021.

The population of this study was all students of class VI SD Negeri 067097 Medan Barat, amounting to 50 people. It consists of 25 students in class VI A and 25 students in class VI B.

The research sample was taken from the two sixth grades in SD Negeri 067097, namely VI A and VI B. Then, based on high and low learning motivation, a questionnaire obtained class VI A as the control class and class VI B as the class Experiment.

### **Instrument Trial**

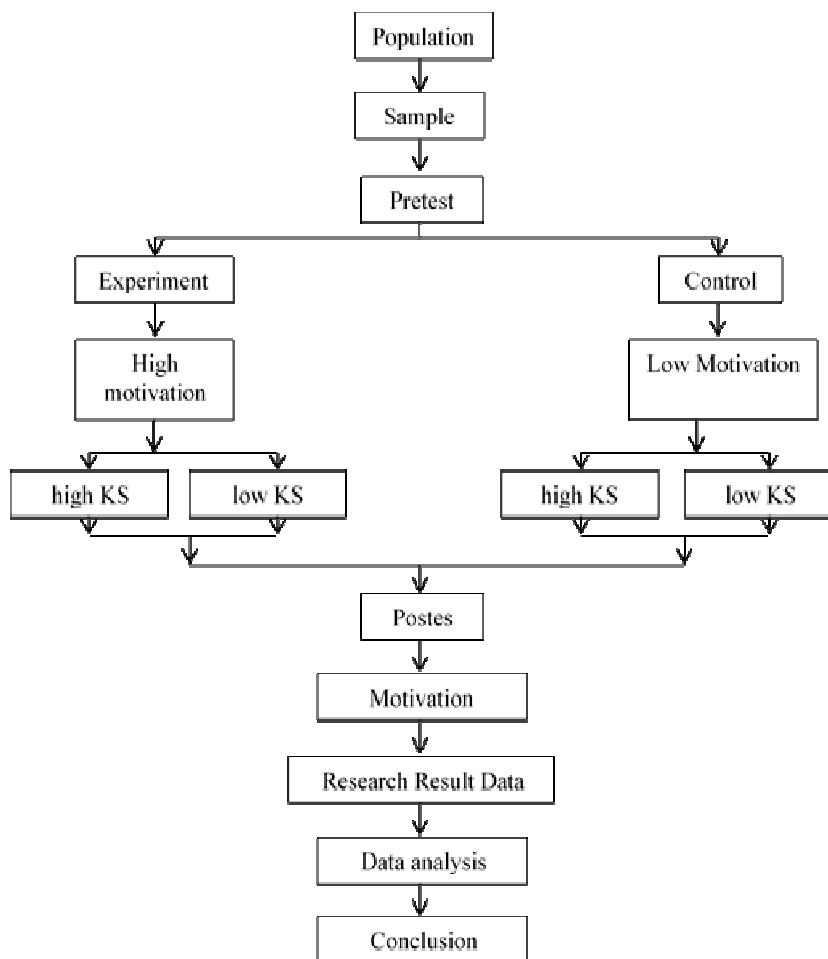
#### **a. Learning Outcome Instrument Trial**

the instrument should be tested first. Testing techniques used to obtain a valid instrument are the validity test, reliability test, discriminatory index, and difficulty index.

#### **b. Trial of the Motivation and Social Skills Questionnaire Instrument**

The following device validation is the validation of the learning motivation questionnaire. Validity test, the opinion of the experts (Judgment Expert) can be used. For this reason, questionnaires made based on specific theories must be consulted with experts to get responses to the questionnaires that we have made.

c. Data analysis technique Before the research data is analyzed, prerequisite tests or assumption tests are carried out, including normality tests, homogeneity tests, and hypothesis testing.



**Figure 1.** Research Procedure

## C. Finding and Discussion

### 1. Description of Research Results

#### a. Science Learning Outcomes Pretest

The data pretest of learning outcomes for the control class and the experimental class can be seen in Table 1.

**Table 1.** Science Learning Outcomes Pretest Data

| Control Class | Experiment Class |
|---------------|------------------|
|---------------|------------------|

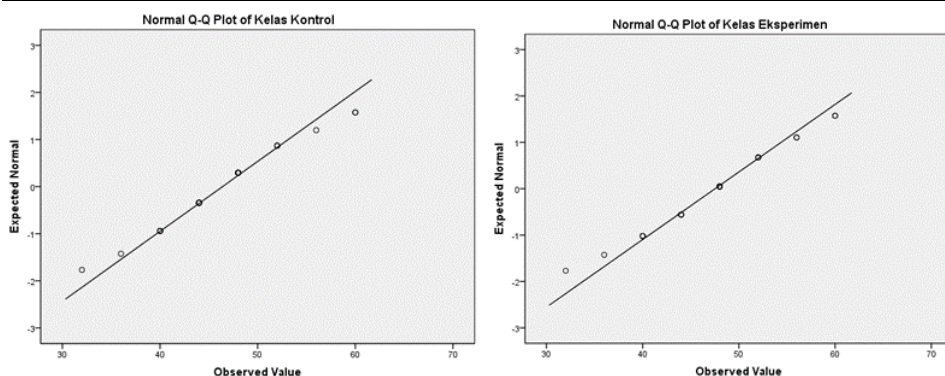
| Score   | F     | F relative (%) | Score   | F     | F relative (%) |
|---------|-------|----------------|---------|-------|----------------|
| 32 – 36 | 2     | 8.0            | 32 – 36 | 2     | 8.0            |
| 37 – 41 | 4     | 16.0           | 37 – 41 | 3     | 12.0           |
| 42 – 46 | 7     | 28.0           | 42 – 46 | 4     | 16.0           |
| 47 – 51 | 6     | 24.0           | 47 – 51 | 8     | 32.0           |
| 52 – 56 | 4     | 16.0           | 52 – 56 | 6     | 24.0           |
| 57 – 61 | 2     | 8.0            | 57 – 61 | 2     | 8.0            |
| Total   | 25    | 100.0          | Total   | 25    | 100.0          |
| mean    | 46.24 |                | mean    | 47.52 |                |

Table 1. shows the normality test results using the Shapiro-Wilk test with the help of SPSS 20.0.

**Table 2.** Pretest Data Normality Test

|                  | Tests of Normality  |    |      |              |    |      |
|------------------|---------------------|----|------|--------------|----|------|
|                  | Kolmogorov-Smirnova |    |      | Shapiro-Wilk |    |      |
|                  | Statistics          | df | Sig. | Statistics   | df | Sig. |
| Control Class    | ,157                | 25 | ,114 | ,955         | 25 | ,325 |
| Experiment Class | ,168                | 25 | ,067 | ,961         | 25 | ,444 |

a. Lilliefors Significance Correction



**Figure 2.** Normality of Science Learning Outcomes Pretest

After knowing that the data is normally distributed, it is then determined whether the two sample classes have the same variance. The variance similarity test of the mean pretest value was carried out with the

Test of Homogeneity of Variance using SPSS 20.00, presented in Table 3.

**Table 3.** Pretest Data Homogeneity Test

| Test of Homogeneity of Variances |     |     |      |
|----------------------------------|-----|-----|------|
| Learning outcomes                |     |     |      |
| Levene Statistics                | df1 | df2 | Sig. |
| ,009                             | 1   | 48  | ,925 |

Table 3 shows that the two students' science learning outcomes data have a sig value ( $=0.925$ ) is greater than the value of  $\alpha$  (0.05) so that  $H_0$  is accepted. Based on this, it can be concluded that the two samples have homogeneous variance.

#### b. Science Learning Outcomes Posttest

**Table 4.** Science Learning Outcomes Posttest Data

| Control Class |       |                | Experiment Class |       |                |
|---------------|-------|----------------|------------------|-------|----------------|
| Score         | F     | F relative (%) | Score            | F     | F relative (%) |
| 52 – 56       | 3     | 12.0           | 60 – 64          | 1     | 4.0            |
| 57 – 61       | 4     | 16.0           | 65 – 69          | 3     | 12.0           |
| 62 – 66       | 7     | 28.0           | 70 – 74          | 3     | 12.0           |
| 67 – 71       | 6     | 24.0           | 75 – 79          | 7     | 28.0           |
| 72 – 76       | 4     | 16.0           | 80 – 84          | 6     | 24.0           |
| 77 – 81       | 1     | 4.0            | 85 – 89          | 5     | 20.0           |
| Total         | 25    | 100.0          | Total            | 25    | 100.0          |
| mean          | 65.44 |                | mean             | 77.76 |                |

From these data, it can be concluded that there is a difference in the average posttest scores of the control class and the experimental class, where the average of the experimental class is higher than the control class.

#### c. Social Skills

Results Questionnaires of students' social skills in the experimental class and students' social skills in the control class briefly posttest results in this study are presented in Table 5.

**Table 5.** Data on Social Skills of Students in Control Class and Experiment Class

| Control Class |       |                | Experiment Class |       |                |
|---------------|-------|----------------|------------------|-------|----------------|
| Score         | F     | F relative (%) | Score            | F     | F relative (%) |
| 60 – 64       | 1     | 4.0            | 66 – 70          | 2     | 8.0            |
| 65 – 69       | 2     | 8.0            | 71 – 75          | 3     | 12.0           |
| 70 – 74       | 4     | 16.0           | 76 – 80          | 5     | 20.0           |
| 75 – 79       | 9     | 36.0           | 81 – 85          | 8     | 32.0           |
| 80 – 84       | 8     | 32.0           | 86 – 90          | 4     | 16.0           |
| 85 – 89       | 1     | 4.0            | 91 – 95          | 3     | 12.0           |
| Total         | 25    | 100.0          | Total            | 25    | 100.0          |
| mean          | 76.60 |                | mean             | 81.24 |                |

From these data, it can be concluded that there is a difference in the average value of students' social skills in the control and experimental classes.

#### **d. Student's motivation to study**

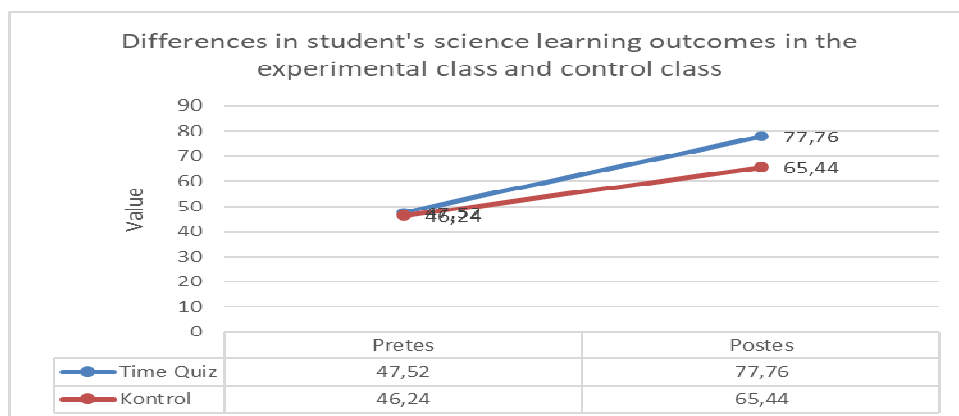
**Table 6.** Student Learning Motivation Questionnaire Data in the Control Class and Experiment Class

| Control Class |       |                | Experiment Class |       |                |
|---------------|-------|----------------|------------------|-------|----------------|
| Score         | F     | F relative (%) | Score            | F     | F relative (%) |
| 74 – 77       | 3     | 12.0           | 73 – 77          | 2     | 8.0            |
| 78 – 81       | 4     | 16.0           | 78 – 82          | 4     | 16.0           |
| 82 – 85       | 8     | 32.0           | 83 – 87          | 5     | 20.0           |
| 86 – 89       | 3     | 12.0           | 88 – 92          | 6     | 24.0           |
| 90 – 93       | 5     | 20.0           | 93 – 97          | 4     | 16.0           |
| 94 – 97       | 2     | 8.0            | 98 – 101         | 4     | 16.0           |
| Total         | 25    | 100.0          | Total            | 25    | 100.0          |
| mean          | 84.84 |                | mean             | 88,20 |                |

From these data, it can be concluded that there is a difference in the average score of students' learning motivation in the control class and the experimental class.

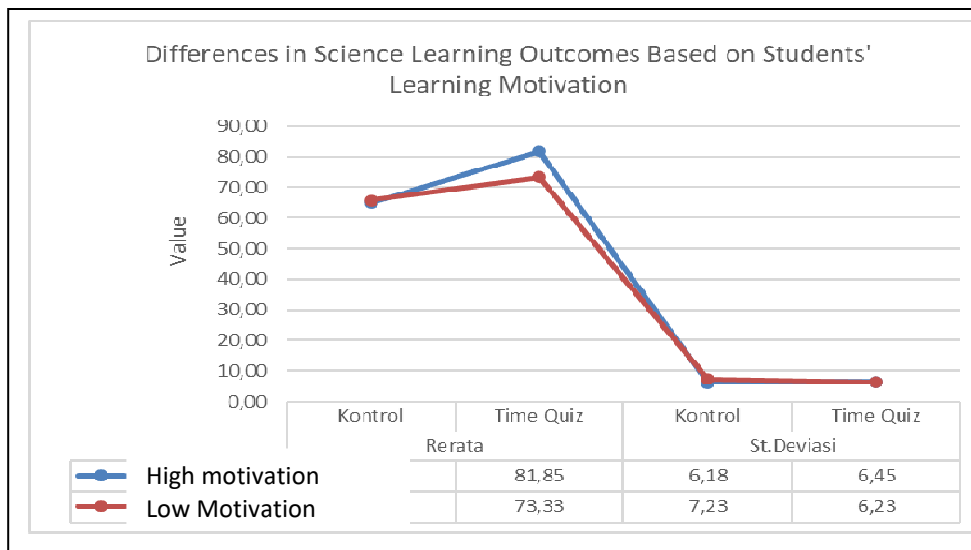
### e. Analysis of Research Results

- Pretest and Posttest Data Analysis of Students' Science Learning Outcomes



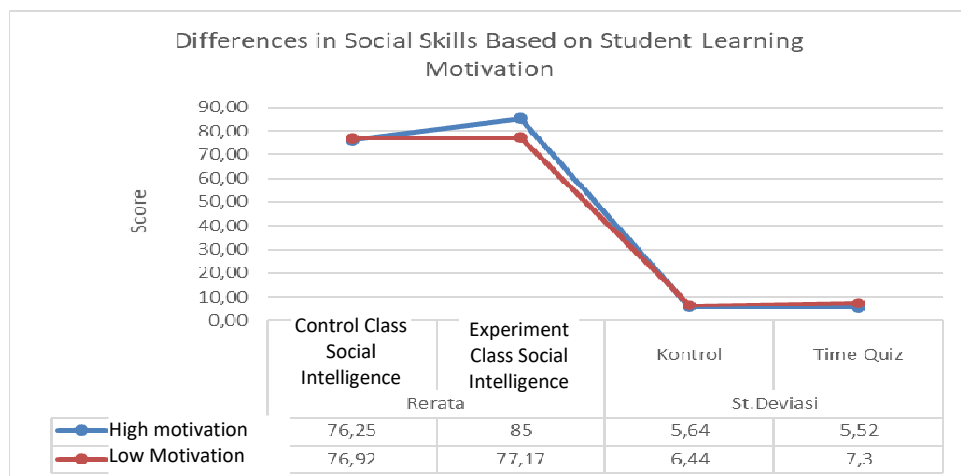
**Figure 3.** Comparison of Science Learning Outcomes Data for control and experimental class students

It can be concluded that the increase in the ability of students' science learning outcomes in the class taught by the IT-assisted Team Quiz learning model is better than the control class taught with the conventional learning model alone. Results This shows that the average value of students' science learning outcomes in the experimental class is higher than that in the control class with both high and low learning motivation. In summary, the analysis of the value of students' science learning outcomes based on the level of students' learning motivation can be seen in Figure 4.



**Figure 4.** Student's Science Learning Outcomes based on Student's Learning Motivation

- Student Social Skills Data Analysis

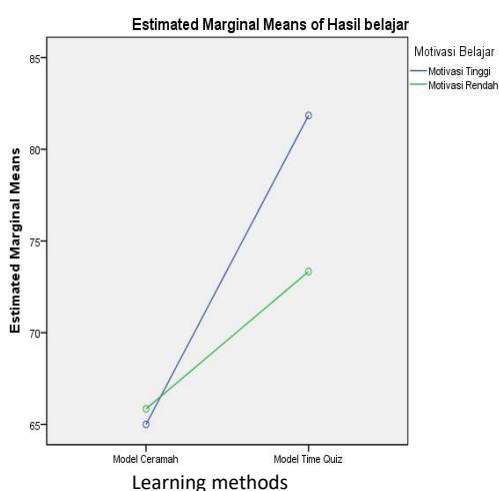


**Figure 5.** Comparison of Social Skills Data for control and experimental class students

It can be concluded that the Team Quiz's learning motivation and

learning model on students' social skills in the subject matter of the solar system in class VI SD Negeri 067097 Medan FY 2020/2021.

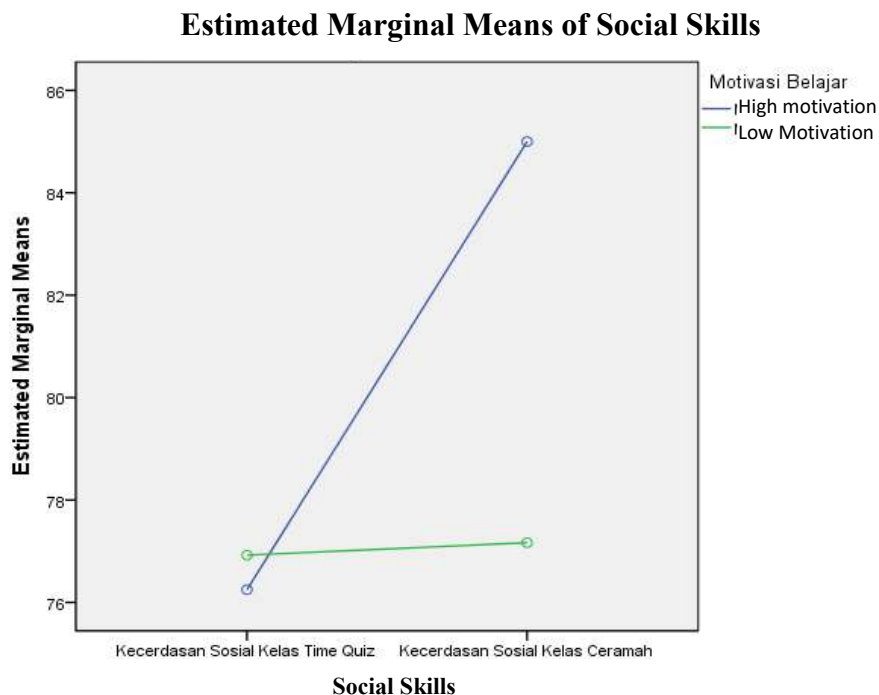
The results of the interaction between the Team Quiz learning model and learning motivation on the science learning outcomes of solar system subject matter in class VI SD Negeri 067097 Medan can also be presented in graphical form. Figure 4.5. shows a graph of the interaction between the learning model and learning motivation on student learning outcomes.



**Figure 6.** The interaction between the Team Quiz learning model and learning motivation on science learning outcomes for sixth-grade students at SD Negeri 067097 Medan

#### - Student Social Skills

The interaction between the Team Quiz learning model and learning motivation on students' social skills in the subject matter of the solar system in class VI SD Negeri 067097 Medan can also be presented in graphical form. Figure 8 shows a graph of the interaction between the learning model and learning motivation on students' social skills.



**Figure 7.** The interaction between the Team Quiz learning model and learning motivation on the social skills of sixth-grade students at SD Negeri 067097 Medan

Based on the picture above, the interaction between the learning model and the level of learning motivation is a cross between the lines. Based on the picture above, at a point where there is an intersection between the two lines, it can be seen that in the control class, the learning outcomes of students who have high levels of learning motivation are almost the same as students who have low learning motivations. In other words, both students who have high and low learning motivation taught using conventional learning models show the same social skills. In contrast to classes taught with the IT-assisted Team Quiz learning model. Students who have high learning motivation show higher social skills compared to students who have low learning

motivation. They are shown in the form of a graph that is getting wider. In other words, both students with high learning motivation taught with the IT-assisted Team Quiz learning model provide better social skills than conventional learning models.

## **1. Discussion**

### **a. The effect of the Team Quiz learning model on the science learning outcomes of the solar system subject**

The results of the research data analysis showed that the value of  $\text{sig. } 0.000 < 0.05$ , this means that the results of hypothesis testing reject  $H_0$  or accept  $H_a$  in the 5% alpha level, meaning that there is a significant influence on the Team Quiz learning model on the science learning outcomes of solar system subject matter in grade VI students of SD Negeri 067097 Medan FY 2020/ 2021. In other words, from the results of this test, it can be concluded that students who are taught using the Team Quiz learning model get an average score of better learning outcomes than students who are taught using the conventional learning model.

The average score of science learning outcomes for students who use the Team Quiz learning model is 77.76. Because when learning takes place, students' enthusiasm is considerable in participating in learning. Students feel that learning becomes less tedious and more fun, and students also become active and more interested. Team Quiz learning model is learning that directly involves students working with their groups. This learning model also makes the learning atmosphere more enjoyable so that students will more easily understand the science material being studied. The cooperative learning model of the quiz team type demands student responsibility to stimulate students to be more active during learning activities and impact learning outcomes.

Students who have high learning motivation and learning uses the Team Quiz learning model gets an average score of 81.85., can be seen from students' enthusiasm when they work together in groups, responding to tasks given by the teacher and students look more active and very excited. The students' encouragement can also cause high learning motivation to do something to achieve a goal. It can increase students' learning motivation.

The average score of science learning outcomes for highly motivated students who learn using the lecture or conventional model is 65.00. When learning in class, students tend to be bored, unmotivated, and make students sleepy. The learning carried out is only the teacher explains the material presented without any variations in the discussion. In the expository learning model, the activities tend to watch and are less attractive, so students become passive. While students who have low learning motivation whose learning uses the lecture model are 65.85. Because the teacher dominates the learning process with lectures, students' interest in learning decreases and students tend to be easily bored, unmotivated, and passive.

This study follows Meiga Sari Sutamtomo (2018) research results, stating that the Team Quiz learning model improves science learning outcomes. Science learning outcomes of students taught using the Quiz Team learning model can improve science learning outcomes compared to the expository learning model. Thus, it can be concluded that the use of the Quiz Team type of cooperative learning model can improve science learning outcomes compared to the expository learning model.

#### **b. The Influence of Learning Motivation on Science Learning Outcomes Solar System Subjects**

The significance value of the influence of learning motivation on learning outcomes is 0.044. Because of the value of sig. 0.044 < 0.05 so that the results of hypothesis testing reject H<sub>0</sub> and accept H<sub>a</sub> in the 5%

alpha level, meaning that there is a significant influence on learning motivation on science learning outcomes for solar system subject matter in grade VI students of SD Negeri 067097 Medan FY 2020/2021. This hypothesis shows that science learning outcomes in groups of students who have high learning motivation are better than students who have low motivation to learn.

Results This follows Sutamtomo's research (2018) from the calculation results of the two-way ANOVA test with the results of the hypothesis obtained  $F_{count} = 39.834$   $p = 0.000$ , means that there are science learning outcomes of students who have high and low motivation. Students who have motivation in science subjects will find it easier to follow the learning process with the Team Quiz learning model that emphasizes responsibility and cooperation in groups. Students with high learning motivation will be more enthusiastic about achieving learning outcomes that follow desired, namely the achievement of superior science learning outcomes. Meanwhile, students with low learning motivation will have unsatisfactory learning outcomes.

**c. The Influence of the Interaction of the Quiz Team Learning Model and Learning Motivation on Science Learning Outcomes Solar System Subjects**

Results analysis of variance significance value of the learning model\* learning motivation was obtained at 0.015. Because of the value of sig.  $0.015 < 0.05$  so that the results of hypothesis testing reject  $H_0$  and accept  $H_a$  in the 5% alpha level, meaning that there is an interaction between the Team Quiz learning model and learning motivation on science learning outcomes for solar system subject matter in grade VI students of SD Negeri 067097 Medan FY 2020/2021.

Results This is in line with Sutamtomo's research (2018), which proves an interaction between learning models and students' learning motivation on students' science learning outcomes, with  $F_{ab}$  count = 5.311 [758]

$p = 0.024$ . Learning with the Team Quiz model obtained an average of 19,842, while learning with the expository model obtained an average of 10,769. This is because learning with the Team Quiz learning model makes students enthusiastic, active, and not bored in participating in the learning process, so that science learning outcomes and student interest in learning are high. Meanwhile, the expository learning model only makes students bored, less enthusiastic, and passive in participating in the class learning process, so science learning outcomes and student learning motivation are low.

**d. The Influence of the Team Quiz Learning Model on Students' Social Skills on the subject matter of the solar**

Results Data analysis obtained the significance value of the influence between the learning model and social skills of 0.015. Because of the value of sig.  $0.015 < 0.05$ . So that the results of hypothesis testing reject  $H_0$  or accept  $H_a$  at the 5% alpha level, meaning that there is a significant effect of the Team Quiz learning model on students' social skills in solar system subject matter in grade VI students of SD Negeri 067097 Medan FY 2020/2021. In other words, from the results of this test, it can be concluded that students who were taught using the Team Quiz learning model obtained an average score of better social skills compared to students who were taught using the conventional learning model.

Results This research is following the research of Ni Ketut Susani et al. (2016), which proves that the team quiz learning model used in social studies learning from research results is proven to be better in improving student learning outcomes when compared to conventional learning models, which are often considered as old learning models, which are generally more oriented to the subject matter than the achievement of student competencies.

**e. The Effect of Learning Motivation on Students' Social Skills on the subject matter of the solar system**

Results analysis of variance obtained a significant value of the effect of learning motivation on social skills of 0.049. Because of the value of sig.  $0.049 < 0.05$  so that the results of hypothesis testing reject  $H_0$  and accept  $H_a$  at the 5% alpha level, meaning that there is a significant effect of learning motivation on students' social skills in the subject matter of the solar system in class VI SD Negeri 067097 Medan FY 2020/2021. This hypothesis shows that students' social skills in groups of students who have high learning motivation are better than groups of students who have low learning motivation.

**f. The Effect of Interaction of Learning Motivation and Learning Models of Team Quiz on Social Skills in Science lessons on solar system subject**

Results analysis of variance obtained the significance value of the learning motivation learning model on students' social skills of 0.020. Because of the value of sig.  $0.020 < 0.05$  so that the results of hypothesis testing reject  $H_0$  and accept  $H_a$  in the 5% alpha level, meaning that there is an interaction between the Team Quiz learning model and learning motivation on students' social skills in solar system subject matter in class VI SD Negeri 067097 Medan FY 2020/ 2021.

**D. Conclusion**

Based on the results of research and discussion, several conclusions can be obtained as follows:

1. The Team Quiz learning model significantly affects the science learning outcomes of the subject matter of the reproduction of living things in grade VI students of SD Negeri 067097 Medan FY 2020/2021. In other words, from the results of this test, it can be

concluded that students who are taught using the Time Quiz learning model get an average score of better learning outcomes than students who are taught using the conventional learning model.

2. Learning motivation has a significant effect on science learning outcomes for the reproduction of living things in class VI SD Negeri 067097 Medan FY 2020/2021. This hypothesis shows that science learning outcomes in groups of students who have high learning motivation are better than groups of students who have low motivation to learn.
3. There is an interaction between the Team Quiz learning model and learning motivation on science learning outcomes to reproduce living things in class VI SD Negeri 067097 Medan FY 2020/2021.
4. The Team Quiz learning method significantly affects students' social intelligence in the subject matter of the reproduction of living things in class VI SD Negeri 067097 Medan FY 2020/2021.
5. Learning motivation has a significant effect on students' social intelligence on the reproduction of living things in grade VI students of SD Negeri 067097 Medan FY 2020/2021.
6. There is an interaction between the Team Quiz learning model and learning motivation on students' social skills in the reproduction of living things in class VI SD Negeri 067097 Medan FY 2020/2021.

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